Abstract

A wireless network has nodes, which can be accessed by wireless terminals via wireless access links, coupled via wireless transit links using multiple directional antenna 5 beams. The nodes are self-organizing and self-adapting as nodes are added and as other changes occur. A new node uses beam scanning to listen for signals from any existing nodes and responds accordingly to join a network. Established nodes each recurrently transmit a welcome message on unused beams, to be 10 received by a new node. Failure of transit links, e.g. due to interference on a channel frequency, is detected with automatic restoration using another frequency. Beam scanning can be enhanced using alternate overlapping beams and diversity techniques.